Algebra III Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Basic Counting and Multiplication Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Principles HW Period\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. A group of 75 people includes 32 who play tennis, 37 who play golf, and 8 who play both tennis and golf. How many people in the group play neither sport?
2. A class of 30 music students includes 13 who play the piano, 16 who play the guitar, and 5 who play both the piano and the guitar. How many students in the class play neither instrument?
3. A group of 100 people touring Europe includes 42 people who speak French, 55 who speak German and 17 who speak neither language. How many people in the group speak both French and German?
4. A high school football team with 40 players includes 16 players who played offense last year, 17 who played defense, and 12 who were not on last year’s team. How many players from last year played both offense and defense?
5. A particular new car model is available with 5 choices of color, 3 choices of transmission, 4 types of interior and 2 types of engine. How many different variations of this model car are possible?
6. A delicatessen serves meat sandwiches with the following options: 3 kinds of bread, 5 kinds of meat, and lettuce or sprouts. How many different sandwiches are possible, assuming one item is used out of each category.
7. How many 4-letter code words are possible from the first 6 letters of the alphabet if no letter is repeated? If letters are repeated? If adjacent letters must be different?
8. A combination lock has 5 wheels, each labeled with the 10 digits from 0 to 9. How many 5-digit opening combinations are possible if no digit is repeated? If digits are repeated? If successive digits must be different?
9. How many different license plates are possible if each contains 3 letters followed by 3 digits? How many of these license plates contain no repeated letters and no repeated digits?

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